REMARKS

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 1 has been amended to clarify the feature of the present invention whereby the photosensor device comprises a plurality of fiber bundles, each of which comprises a light-applying fiber to apply an inspection light to a subject to be inspected, and a light-receiving fiber to receive a reflected light from the subject to be inspected. In addition, claim 1 has been amended to clarify that the photosensor device of the present invention comprises at least one laser beam source to emit the inspection light to the light-applying fiber of each of the fiber bundles, at least one photosensor to receive the reflected light via the light-receiving fiber of each of the fiber bundles, a casing, and an objective optical system provided at a front end of each of the fiber bundles. And still further, claim 1 has been amended to clarify that each of the fiber bundles is provided separately. (See the disclosure in specification at page 8, lines 14-16, and see also elements 103a, 104a in Fig. 1.)

Similarly, claim 3 has been amended to clarify that the fiber array of the photosensor body recited therein is constructed by arranging a plurality of separate sensor units as multi-channels.

In addition, claim 2 has been amended to clarify that each light-applying fiber is provided with a corresponding laser source and that each light-receiving fiber is provided with a corresponding photosensor. (See the disclosure in the specification at page 10, lines 8-10, and see also elements 113 in Fig. 2.)

It is respectfully submitted that no new matter has been added and that the amendments to the claims are clarifying in nature, and that no new issues with respect to patentability have been raised which would require further consideration on the merits and/or a new search.

Accordingly, it is respectfully requested that the amendments to claims 1-3 be approved and entered under 37 CFR 1.116.

THE PRIOR ART REJECTION

Claims 1 and 2 were rejected as being obvious in view of the combination of USP 5,966,212 ("Hendler et al") and USP 4,809,188 ("Willits et al"); and claims 3 and 4 were rejected under 35 USC

103 as being obvious in view of the combination of Hendler et al, Willits et al and USP 6,445,447 ("Wang et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

Hendler et al disclose a test method of scanning a device under test (DUT) (e.g. integrated circuit or flat panel) with parallel light beams by use of Optical Fourier transform cells, and detecting a transmitted light, a reflected light, or decrement of the transmitted light, wherein fibers are used to introduce a light from a light source to a collimating lens.

In the structure disclosed in Hendler et al, a parallel light beam is used to scan the DUT, so that the light-applying side of the Fourier transform scanning system for measuring the reflected light and the light-receiving side of the system must be positioned at an angle with respect to one another and with respect to the DUT, as shown in Fig.4A. Alternatively, as shown in Fig.5 of Hendler et al, the light receiving side may face the DUT. In this case, however, a beam splitter 520 is required to reflect the parallel light from the light-applying side to the DUT and to allow the light reflected from the DUT at normal incidence to pass through to the light receiving side.

As acknowledged by the Examiner on page 3 of the Office Action, "Hendler fails to teach that the light-applying fiber and

the light-receiving fiber are bundled to form a fiber bundle, and an objective optical system is provided at the front end of the fiber bundle." For this reason, the Examiner has cited Willits et al.

It is respectfully submitted, however, that Willits et al and Hendler et al are non-analogous art, and that a person of ordinary skill in the field of the present invention would have no motivation to combine the fiber bundles of Willits et al with the detection method of Hendler et al.

As set forth by the CAFC in In re Clay, 23 USPQ2d 1058 (1992), "Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved."

Willits et al relates to an apparatus for detecting indicia on a patterned material to enable positioning the material. As described at column 3, lines 3-6 of Willits et al, it is the object of Willits et al "to provide a new and improved system for determining the position and quality of a pattern indicia, location of that pattern indicia into a machining area and machining initiation." And as described at column 1, lines 5-22

of Willits et al, the apparatus of Willits et al may be applied to manufacturing operations involving "credit cards, nameplates, printed circuit boards or previously partially fabricated materials and a tool or tools for a machining operation." To achieve this object, the apparatus of Willits et al comprises bundled illumination fibers and sensor fibers, and the reflected light from the patterned material is detected and its pattern is identified.

By contrast, as pointed out hereinabove, Hendler et al teaches the use of a parallel light beam to scan the DUT, which requires the structure shown in Figs. 4A and 5 of Hendler et al. In this connection, it is noted that if the light-applying fiber and the light-receiving fiber of Hendler et al were bundled, and parallel light from the light-applying fiber were applied to a subject to be inspected, then the reflected light would return to the light-applying fiber and would not enter the light-receiving fiber. Thus, it is respectfully submitted that the structure disclosed in Willits et al cannot be applied to the method of scanning a DUT with parallel light, as in Hendler et al.

It is respectfully submitted, moreover, that as pointed out hereinabove, Willits et al is directed to solving problems in positioning a patterned material in a manufacturing operation.

By contrast, the claimed present invention and Hendler et al are both directed to detecting defects or failures of a disc.

In view of the foregoing, it is respectfully submitted that Willits et al is neither from the same field of endeavor as the claimed present invention, nor directed to the same problem solved by the claimed present invention. And it is therefore respectfully submitted that Willits et al is a non-analogous reference and that one of ordinary skill in the art of image recording would have had no motivation to turn to the teachings of Willits et al and that this reference is not properly combinable with Hendler et al under 35 USC 103 in accordance with the above described criteria established by the CAFC.

Still further, even if Willits et al were properly combinable with Hendler et al, it is respectfully submitted that the structure of the present invention as recited in the amended claims still would not be achieved or rendered obvious. This is because neither Hendler et al nor Willits et al discloses, teaches or suggests the feature of the present invention as recited in amended independent claim 1 whereby the photosensor device comprises a plurality of fiber bundles, each fiber bundle comprising a light-applying fiber to apply an inspection light to a subject to be inspected, and a light-receiving fiber to receive a reflected light from the subject to be inspected, at least one

laser beam source to emit the inspection light to the light-applying fiber of each of the fiber bundles, at least one photosensor to receive the reflected light via the light-receiving fiber of each of the fiber bundles, a casing, and an objective optical system provided at a front end of each of the fiber bundles, wherein each of the fiber bundles is provided separately. More specifically, it is respectfully submitted that Hendler et al does not disclose bundling fibers, as acknowledged by the Examiner, and that Willits et al merely discloses the bundles shown in Figs. 2-4 thereof whereby all light-applying fibers and all light-receiving fibers are grouped in a single bundle. In fact, as described at column 5, lines 16-19 of Willits et al, "For highest sensing accuracy with imperfect pattern marks (irregular or poorly printed) and relatively large imaged fiber diameter, it is important to provide such a symmetrical arrangement" (emphasis added). It is respectfully submitted, therefore, that Willits et al clearly does not disclose, teach or suggest the bundling of fibers according to the present invention as recited in amended claim 1 wherein a plurality of fiber bundles are provided, each fiber bundle comprising a light-applying fiber to apply an inspection light to a subject to be inspected, and a light-receiving fiber to receive

a reflected light from the subject to be inspected, and wherein each of the fiber bundles is provided separately.

In addition, it is respectfully submitted that neither Hendler et al nor Willits et al discloses, teaches, or suggests the feature of the present invention as recited in amended claim 2 whereby each sensor unit comprises one laser beam source connected to each light-applying fiber of the fiber bundles, and one photosensor connected to each light-receiving fiber of the fiber bundles. By contrast, Willits et al discloses at column 5, lines 28-31 a single sensor 46 provided for the plurality of fibers in the sensor bundle 36.

Still further, it is respectfully submitted that Hendler et al and Willits et al do not disclose, teach or suggest the features of the present invention as recited in amended independent claim 3, whereby the disk inspection apparatus comprises, in particular, a photosensor body comprising a fiber array constructed by arranging a plurality of separate sensor units as multi-channels, and wherein each of the sensor units comprises a light-applying fiber, a light-receiving fiber which is bundled with the light-applying fiber to form a fiber bundle, a laser beam source to emit the inspection light to the light-applying fiber, a photosensor to receive the reflected

light via the light-receiving fiber, and an objective optical system provided at a front end of the fiber bundle.

As pointed out hereinabove with respect to claim 1, Willits et al discloses bundling all light-applying fibers and light-receiving fibers into a single bundle. Accordingly, it is respectfully submitted that Willits et al does not at all disclose, teach or suggest providing a plurality of separate sensor units, each comprising a fiber bundle including a light-applying fiber and a light-receiving fiber, as recited in amended claim 3. In addition, as pointed out with respect to claim 2, Willits et al discloses providing a single laser source and a single photosensor for the entire fiber bundle. Therefore, it is respectfully submitted that Willits et al clearly does not disclose, teach or suggest providing a plurality of separate sensor units, each of which comprises a laser source and a photosensor, as according to the present invention as recited in amended claim 3.

Wang et al, moreover, has merely been cited for the disclosure of rotating disk optical scanning.

In view of the foregoing, it is respectfully submitted that the claimed present invention clearly patentably distinguishes over Hendler et al, Willits et al and Wang et al, taken singly or in any combination, under 35 USC 103.

* *

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

Leonard Holtz
Reg. No. 22,974

Frishauf, Holtz, Goodman & Chick, P.C.
767 Third Avenue - 25th Floor
New York, New York 10017-2023
Tel. No. (212) 319-4900
Fax No. (212) 319-5101

DH:iv